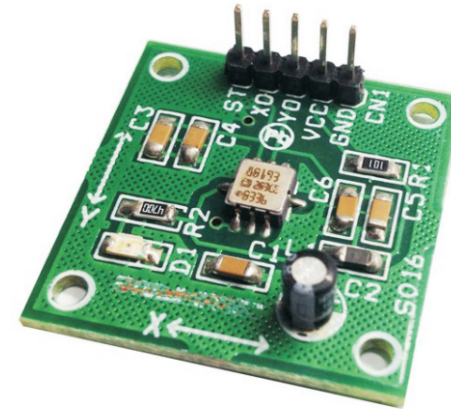


Precision +/- 1.7g Dual-Axis IMEMS Accelerometer Using ADXL203

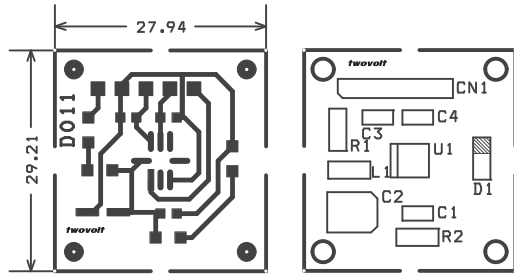
The ADXL203 Module is high precision, low power, complete dual-axis accelerometers with signal conditioned voltage outputs, all on a single, monolithic IC. The ADXL203 measure acceleration with a full-scale range of ± 1.7 g, ± 5 g, or ± 18 g. The ADXL203 can measure both dynamic acceleration (for example, vibration) and static acceleration (for example, gravity). The typical noise floor is $110 \mu\text{g}/\sqrt{\text{Hz}}$, allowing signals below 1 mg (0.06° of inclination) to be resolved in tilt sensing applications using narrow bandwidths ($< 60 \text{ Hz}$). The user selects the bandwidth of the accelerometer using Capacitor CX and Capacitor CY at the XOUT and YOUT pins. Bandwidths of 0.5 Hz to 2.5 kHz can be selected to suit the application.

FEATURES

- Supply 4.75V To 5.25V
- Output 1.4V To 3V (2.2V Center) Aprox.
- High performance, dual-axis accelerometer on a single IC chip
- $5 \text{ mm} \times 5 \text{ mm} \times 2 \text{ mm}$ LCC package
- 1 mg resolution at 60 Hz
- Low power: $700 \mu\text{A}$ at $V_S = 5 \text{ V}$ (typical)
- High zero g bias stability
- High sensitivity accuracy
- -40°C to $+125^\circ\text{C}$ temperature range
- X and Y axes aligned to within 0.1° (typical)
- Bandwidth adjustment with a single capacitor
- Single-supply operation
- 3500 g shock survival
- Sensitivity is essentially ratiometric to VCC For $V_{CC} = 4.75 \text{ V}$ to 5.25 V , sensitivity is 186 mV/V/g to 215 mV/V/g .
- 4 Actual frequency response controlled by user-supplied external capacitor (CX, CY).
- 5 Bandwidth = $1/(2 \times \pi \times 32 \text{ k}\Omega \times C)$. For CX, CY = $0.002 \mu\text{F}$, bandwidth = 2500 Hz . For CX, CY = $10 \mu\text{F}$, bandwidth = 0.5 Hz . Minimum/maximum values are not tested. 6 Self-test response changes cubically with VS.
- 7 Larger values of CX, CY increase turn-on time. Turn-on time is approximately $160 \times CX$ or $CY + 4 \text{ ms}$, where CX, CY are in μF .



Precision +/- 1.7g Dual-Axis IMEMS Accelerometer Using ADXL203



BOM			
SR.	QNTY.	REF.	DESC.
1	1	CN1	5 PIN HEADER CONNECTOR
2	1	C1	0.1uF SMD 1206
3	1	C2	10uF/63V SMD
4	2	C3,C4	0.22uF SMD1206
5	1	D1	LED SMD1206
6	1	L1	FERRITE BEAD
7	1	R1	10E
8	1	R2	470E
9	1	U1	ADXL203E

